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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/788,831	02/28/2004	Kyung-Ju Choi	ZM921/04004	7345

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JOHN F. SALAZAR
MIDDLETON & REUTLINGER
2500 BROWN & WILLIAMSON TOWER
LOUISVILLE, KY 40202

EXAMINER

DEL SOLE, JOSEPH S

ART UNIT	PAPER NUMBER
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1722

DATE MAILED: 05/24/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/788,831

Applicant(s)

CHOI, KYUNG-JU

Examiner

Joseph S. Del Sole

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 19 May 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 30-49 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 30-49 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 19 May 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 30-33, 37-38 and 41-46 are rejected under 35 U.S.C. 102(b) as being anticipated by Frickert et al (2,875,503).

Frickert et al teach an apparatus for manufacturing a fibrous mat having a first die source (Fig 1, at Stage 1) including spaced die orifices capable of feeding a first attenuated multiple fibered layered portion; a first selectively gap spaced longitudinally extending first rotating collector surface (Fig 1, either #22 of stage 1) to receive the first layered portion; a spaced second die source (Fig 1, at Stage 2) including spaced die orifices capable of feeding a second attenuating multiple fiber layered portion; a second gap spaced longitudinally extending second rotating collector surface (Fig 1, #s 26-30 of Stage 2) to receive the second fiber layered portion, the second rotating collector surface being spaced from the first rotating collector surface; and transfer and orientation means positioned between the first and second collector surface to orient and transfer the first layered mat portion from the first rotating collector surface to the second rotating collector surface (Fig 1, #s 26-30 of Stage 1); at least one layered mat diverting apparatus positioned externally of one of the die source to apply an external vortically creating force on part of one of the fiber layered portions before the portion

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reaches the cooperative rotating collecting source for the layered portion (Fig 1, the other of #22 in Stage 1); a motor and gear driven system in mechanical communication with each of the at least two longitudinally extending cylindrical rotatable collectors providing a rotation force to each of the at least two longitudinally extending cylindrical rotatable collectors (Fig 1, that which rotates the cylinders); at least one longitudinally extending idle roller (Fig 1, and of #s 26-30), wherein at least one of the at least one longitudinally extending idle roller is positioned between each of the at least two longitudinally extending cylindrical rotatable collectors; each of the at least two spaced successive melt blown die sources is aligned above a first or fourth cross-sectional quadrant (such relativeness of quadrants is not clearly defined as discussed above) of each of the at least two longitudinally extending cylindrical rotatable collects and each of the at least two longitudinally extending cylindrical rotatable collectors have the rotation force applied thereto in a common direction or into an opposite direction (Fig 1, relative to which of the #s22 are viewed as the cylinder); and a work station is positioned downstream from a final of the at least two longitudinally extending cylindrical rotatable collectors (Fig 1); the at least one of the said at least one longitudinally extending idler rollers positioned between each of the at least two longitudinally extending cylindrical rotatable collectors is three idle rollers arranged in a substantially triangular configuration (Fig 1, #s 26-30 of Stage 2).

3. Claims 30-33, 37-38 and 41-46 are rejected under 35 U.S.C. 102(b) as being anticipated by Loubinoux et al (5,425,796).

Loubinoux et al teach an apparatus having a first die source (Fig 1, #7) including spaced die orifices capable of feeding a first attenuated multiple fibered layered portion; a first selectively gap spaced longitudinally extending first rotating collector surface (Fig 1, 9) to receive the first layered portion; a spaced second die source (Fig 1, #7) including spaced die orifices capable of feeding a second attenuating multiple fiber layered portion; a second gap spaced longitudinally extending second rotating collector surface (Fig 1, # 19) to receive the second fiber layered portion, the second rotating collector surface being spaced from the first rotating collector surface; and transfer and orientation means positioned between the first and second collector surface to orient and transfer the first layered mat portion from the first rotating collector surface to the second rotating collector surface (Fig 1, #s 12-17); at least one layered mat diverting apparatus positioned externally of one of the die source to apply an external vortically creating force on part of one of the fiber layered portions before the portion reaches the cooperative rotating collecting source for the layered portion (Fig 1, #4); a motor and gear driven system in mechanical communication with each of the at least two longitudinally extending cylindrical rotatable collectors providing a rotation force to each of the at least two longitudinally extending cylindrical rotatable collectors (Fig 1, that which rotates the cylinders); at least one longitudinally extending idle roller (Fig 1, #s 12-17), wherein at least one of the at least one longitudinally extending idle roller is positioned between each of the at least two longitudinally extending cylindrical rotatable collectors; each of the at least two spaced successive melt blown die sources is aligned above a first or fourth cross-sectional quadrant (such relativeness of quadrants is not

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clearly defined as discussed above) of each of the at least two longitudinally extending cylindrical rotatable collectors and each of the at least two longitudinally extending cylindrical rotatable collectors have the rotation force applied thereto in a common direction (Fig 1, relative to the point nearest contact of the rollers, each roller is rolling upwards) or into an opposite direction (Fig 1, one is rotating clockwise, the other counterclockwise); and a work station is positioned downstream from a final of the at least two longitudinally extending cylindrical rotatable collectors (Fig 1); the at least one of the said at least one longitudinally extending idler rollers positioned between each of the at least two longitudinally extending cylindrical rotatable collectors is three idle rollers arranged in a substantially triangular configuration (Fig 1, #s 12-14 or 15-17).

4. Claims 30, 33-36 and 41-48 are rejected under 35 U.S.C. 102(b) as being anticipated by Nishino et al (5,628,844).

Nishino et al teach an apparatus having a first die source (Fig 3, #31) including spaced die orifices capable of feeding a first attenuated multiple fibered layered portion; a first selectively gap spaced longitudinally extending first rotating collector surface (Fig 3, #30) to receive the first layered portion; a spaced second die source (Fig 3, #34) including spaced die orifices capable of feeding a second attenuating multiple fiber layered portion; a second gap spaced longitudinally extending second rotating collector surface (Fig 3, # 33) to receive the second fiber layered portion, the second rotating collector surface being spaced from the first rotating collector surface; and transfer and orientation means positioned between the first and second collector surface to orient and transfer the first layered mat portion from the first rotating collector surface to the

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second rotating collector surface (Fig 3, # 37);; a motor and gear driven system in mechanical communication with each of the at least two longitudinally extending cylindrical rotatable collectors providing a rotation force to each of the at least two longitudinally extending cylindrical rotatable collectors (Fig 3, that which rotates the cylinders); at least one longitudinally extending idle roller (Fig 3, the rightmost roller within #33), wherein at least one of the at least one longitudinally extending idle roller is positioned between each of the at least two longitudinally extending cylindrical rotatable collectors; each of the at least two longitudinally extending cylindrical rotatable collectors has a perforated surface, an internal coolant and a vacuum source in flow communication thereto (Fig 3, #s 41 and 43, the Examiner notes that the claimed vacuum must have perforations for flow therethrough and that vacuum has a cooling affect); each of the at least two spaced successive melt blown die sources is aligned above a first or fourth cross-sectional quadrant (such relativeness of quadrants is not clearly defined as discussed above) of each of the at least two longitudinally extending cylindrical rotatable collects and each of the at least two longitudinally extending cylindrical rotatable collectors have the rotation force applied thereto in a common direction (Fig 1, relative to the point nearest contact of the rollers, each roller is rolling upwards) or into an opposite direction (Fig 1, one is rotating clockwise, the other counterclockwise); and a work station is positioned downstream from a final of the at least two longitudinally extending cylindrical rotatable collectors (Fig 1); the at least one of the said at least one longitudinally extending idler rollers positioned between each of

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the at least two longitudinally extending cylindrical rotatable collectors is three idle rollers arranged in a substantially triangular configuration (Fig 1, #s 12-14 or 15-17).

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

7. Claims 39, 40 and 49 are rejected under 35 U.S.C. 103(a) as being unpatentable over any of Frickert et al (2,875,503), Loubinoux et al (5,425,796) or Nishino et al (5,628,844).

Barboza et al, Frickert et al, Loubinoux et al and Nishino et al teach the apparatus as discussed above.

Barboza et al, Frickert et al, Loubinoux et al and Nishino et al each fail to teach the specific distances claimed.

Each of Barboza et al, Frickert et al, Loubinoux et al and Nishino et al teach gaps between the collectors and the die sources for the purposes of enabling some cooling and solidification of the molten material exiting the die sources.

It would have been obvious to one having ordinary skill in the art at the time of the Applicant's invention to have modified the inventions of Barboza et al, Frickert et al, Loubinoux et al or Nishino et al with the distances claimed because such distances would have been easily determined by routine experimentation in order to produce the best results dependent on the particular composition of the material worked upon.

Response to Arguments

8. Applicant's arguments filed 5/19/06 have been fully considered but they are not persuasive.

The Examiner notes that the Applicant's amendments and arguments have overcome the objections, the 112 rejections and the art rejections over Barbazoa.

The Applicant argues that Frickert et al fail to disclose rotatable collectors as claimed and points out that wheels 22 are pulling wheels.

The Examiner disagrees. As broadly recited, rolls 22 of Frickert et al teach collectors because the fibers remain on rolls 22 for a period of time and thus can be seen as being collected on the rolls as far as the claims set forth are broadly interpreted.

The Applicant argues that the Loubinoux et al feature #9 is not a collecting surface but is rather a roll for redirecting fibers.

The Examiner disagrees. As broadly recited, rolls 9 of Loubinoux et al teach collectors because the fibers remain on rolls 22 for a period of time and thus can be seen as being collected on the rolls as far as the claims set forth are broadly interpreted.

The Applicant argues that Noshino et al fail to teach collecting surfaces as claimed and fails to teach a transfer and orientation means because feature 37 is an openings

The Examiner disagrees. As broadly recited, drum 30 and belt 33 of Noshino teach collectors because the material remain on these features for a period of time and thus can be seen as being collected on the rolls as far as the claims set forth are broadly recited. Furthermore, feature #37 is a transfer and orientation means as broadly claimed because it transfers (and thus orients even if merely maintaining orientation) material from feature 30 to feature 33.

The Examiner notes that all features claimed are taught by the prior art as set forth in the above rejections. While differences may exist between the prior art and the Applicant's invention, the Examiner sets forth that the claims as broadly interpreted are taught.

Conclusion

9. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

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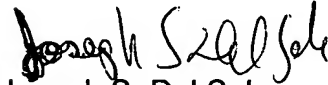
A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Joseph S. Del Sole whose telephone number is (571) 272-1130. The examiner can normally be reached on M-F 8:30 - 5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Yogendra Gupta can be reached on (571) 272-1316. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.


Joseph S. Del Sole
5/22/06